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To: Commissioner for Patents for **Examiner Shawn X. Gu** **Group Art Unit 2189**	Facsimile No.: **571/273-8300**
From: Nancy Milinkovich Legal Assistant to Lisa L.B. Yociss	No. of Pages Including Cover Sheet: **31**

Message:

Enclosed herewith:

- Transmittal;
- Appeal Brief; and
- Response to Office Action.

Re: Application No. **10/735,160**
Attorney Docket No: **03-1840**

Date: Wednesday, October 25, 2006

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Balasubramanian**

Serial No.: **10/735,160**

Filed: **December 12, 2003**

For: **Removable Flash Backup for Storage Controllers**

§ Group Art Unit: **2189**
§
§ Examiner: **Gu, Shawn X.**
§
§ Attorney Docket No.: **03-1840**
§

Certificate of Transmission Under 37 C.F.R. § 1.8(a)
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By: Nancy Milinkovich
Nancy Milinkovich

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Commissioner for Patents
P.O. Box 1450
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Sir:
ENCLOSED HEREWITH:

- Appeal Brief (37 C.F.R. 41.37); and
- Response to Final Office Action.

A fee of $500.00 is required for filing an Appeal Brief. Please charge this fee to LSI Logic Corporation Deposit Account No. 12-2252. No additional fees are believed to be necessary. If, however, any additional fees are required, I authorize the Commissioner to charge these fees which may be required to LSI Logic Corporation Deposit Account No. 12-2252. No extension of time is believed to be necessary. If, however, an extension of time is required, the extension is requested, and I authorize the Commissioner to charge any fees for this extension to LSI Logic Corporation Deposit Account No. 12-2252.

Respectfully submitted,

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Docket No. 03-1840

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Balasubramanian**	§	
	§	Group Art Unit: **2189**
Serial No. **10/735,160**	§	
	§	Examiner: **Gu, Shawn X.**
Filed: **December 12, 2003**	§	
	§	
For: **Removable Flash Backup for Storage Controllers**	§	

Commissioner for Patents
P.O. Box 1450
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By: Nancy Milinkovich
Nancy Milinkovich

APPEAL BRIEF (37 C.F.R. 41.37)

This brief is in furtherance of the Notice of Appeal, filed in this case on August 23, 2006.

A fee of $500.00 is required for filing an Appeal Brief. Please charge this fee to LSI Logic Corporation Deposit Account No. 12-2252. No additional fees are believed to be necessary. If, however, any additional fees are required, I authorize the Commissioner to charge these fees which may be required to LSI Logic Corporation Deposit Account No. 12-2252. No extension of time is believed to be necessary. If, however, an extension of time is required, the extension is requested, and I authorize the Commissioner to charge any fees for this extension to LSI Logic Corporation Deposit Account No. 12-2252.

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REAL PARTY IN INTEREST

The real party in interest in this appeal is the following party: LSI Logic Corporation, Milpitas, California.

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RELATED APPEALS AND INTERFERENCES

With respect to other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal, there are no such appeals or interferences.

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STATUS OF CLAIMS

A. TOTAL NUMBER OF CLAIMS IN APPLICATION

Claims in the application are: 1, 3-13, and 15-20.

B. STATUS OF ALL THE CLAIMS IN APPLICATION

1. Claims canceled: 2 and 14.
2. Claims withdrawn from consideration but not canceled: NONE
3. Claims pending: 1, 3-13, and 15-20.
4. Claims allowed: NONE
5. Claims rejected: 1-20.
6. Claims objected to: NONE

C. CLAIMS ON APPEAL

The claims on appeal are: 1, 3-13, and 15-20

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STATUS OF AMENDMENTS

An amendment after the Final Office Action, which was mailed on June 23, 2006, is filed herewith to cancel claims 2 and 14.

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SUMMARY OF CLAIMED SUBJECT MATTER

A. CLAIM 1 - INDEPENDENT

The subject matter of claim 1 is directed to a method for managing configuration information in a storage controller, the method comprising: setting, by an operator, backup parameters that define how a backup operation will be executed (Specification page 6, line 29, page 7, line 3.); invoking a backup operation using the backup parameters (Specification page 6, line 29, through page 7, line 13; and page 9, lines 1-4); and responsive to a given event (Specification page 9, lines 1-4.): determining if a removable non-volatile memory module is connected to a first storage controller (Specification page 8, lines 7-14; and page 9, line 6.); and responsive to the removable non-volatile memory module being connected to the first storage controller, executing the backup operation to store configuration information from the first storage controller to the removable non-volatile memory module (Specification page 9, lines 7-8.).

B. CLAIM 12 - INDEPENDENT

The subject matter of claim 12 is directed to a storage controller (Specification page 6, lines 15-21.), comprising: a processor (Specification page 7, lines 14-15.); a memory electrically coupled to the processor (Specification page 7, lines 14-15.); an externally accessible socket interface, wherein the externally accessible socket interface provides an electrical connection to the processor (Specification page 5, lines 19-27.); backup parameters, set by an operator, that define how a backup operation will be executed (Specification page 6, line 29, page 7, line 3.); invoking means for invoking a backup operation using the backup parameters (Specification page 6, line 29, through page 7, line 13; and page 9, lines 1-4); and responsive to a given event (Specification page 9, lines 1-4.): determining means for determining if a removable non-volatile memory module is electrically coupled to the processor through the externally accessible socket interface (Specification page 8, lines 7-14; and page 9, line 6.); and responsive to the removable non-volatile memory module being electrically coupled to the processor, executing the backup

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operation to store configuration information from the memory to the removable non-volatile memory module (Specification page 9, lines 7-8.).

B. CLAIM 13 - DEPENDENT

Claim 13 depends from claim 12. The subject matter of claim 13 recites wherein the externally accessible socket interface is a Personal Computer Memory Card International Association card slot. (Specification page 5, lines 19-21.)

C. CLAIM 16 - DEPENDENT

Claim 16 depends from claim 12. The subject matter of claim 16 recites wherein the removable non-volatile memory module is a flash memory module. (Specification page 5, lines 21-23.)

D. CLAIM 17 - DEPENDENT

Claim 17 depends from claim 16. The subject matter of claim 17 recites wherein the flash memory module has a flash file system format for storing data. (Specification page 8, lines 13-14.)

E. CLAIM 18 - INDEPENDENT

The subject matter of claim 18 is directed to an apparatus for managing configuration information in a storage controller, the apparatus comprising: means for setting, by an operator, backup parameters that define how a backup operation will be executed (Specification page 6, line 29, page 7, line 3.); means for invoking a backup operation using the backup parameters (Specification page 6, line 29, through page 7, line 13; and page 9, lines 1-4); and means, responsive to a given event, for (Specification page 9, lines 1-4.): determining if a removable non-volatile memory module is connected to a first storage controller (Specification page 8, lines 7-14; and page 9, line 6.); and responsive to the removable non-volatile memory module being

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connected to the first storage controller, executing the backup operation to store configuration information from the first storage controller to the removable non-volatile memory module (Specification page 9, lines 7-8.).

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GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. GROUND OF REJECTION 1 (Claims 1-12, 14-15, and 18-20)

Claims 1-12, 14-15, and 18-20 stand rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent Application Publication 2003/0177149, published by *Coombs*.

B. GROUND OF REJECTION 2 (Claims 13 and 16)

Claims 13 and 16 stand rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent Application Publication 2003/0177149, published by *Coombs* in view of U.S. Patent 5,410, 707 issued to *Bell*.

C. GROUND OF REJECTION 3 (Claim 17)

Claim 17 stands rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent Application Publication 2003/0177149, published by *Coombs* and U.S. Patent 5,410, 707 issued to *Bell* in view of U.S. Patent 5,404,485 issued to *Ban*.

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ARGUMENT

A. GROUND OF REJECTION 1 (Claims 1-12, 14-15, and 18-20)

Claims 1-12, 14-15, and 18-20 stand rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent Application Publication 2003/0177149, published by *Coombs*. This position is not well-founded.

Applicant has filed a response to Final Office Action herewith in which claims 2 and 14 have been canceled. Therefore, Applicant's arguments will be directed to claims 1, 3-12, 15, and 18-20.

Applicant's independent claims 1 and 18 recite similar features. Independent claim 12 recites these features and additionally recites a processor, a memory, and an externally accessible socket interface.

The features recited by Applicant's claim 1 are representative of the similar features recited by claims 12 and 18. Claim 1 recites setting, by an operator, backup parameters that define how a backup operation will be executed; invoking a backup operation using the backup parameters; and responsive to a given event: determining if a removable non-volatile memory module is connected to a first storage controller; and responsive to the removable non-volatile memory module being connected to the first storage controller, executing the backup operation to store configuration information from the first storage controller to the removable non-volatile memory module.

Thus, the method of claim 1 comprises three steps: setting backup parameters; invoking a backup operation; and responsive to a given event, determining if a module is connected and, if one is connected, executing the backup operation.

Coombs does not anticipate Applicant's claims because *Coombs* does not teach (1) invoking and executing a backup operation, where invoking a backup operation is different from executing a backup operation, or (2) responsive to a given event, determining if a module is connected and, if one is connected, executing the backup operation.

Coombs teaches a system and method for data backup. A computer system 10 includes a primary storage device 22 and a backup storage device 24 that are connected to a device controller 20. *Coombs* describes backing up data that is stored on primary storage device 22 to

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backup storage device 24. Full and incremental backups are stored to the backup device.

Coombs is concerned, primarily, with creating and managing many different incremental backups. For example, a tree 40, see Figure 2, includes a root node 42 which represents a full backup. Many incremental backups are also depicted that are weekly, daily, or micro backups. *Coombs* describes restoring any one of these incremental backups. *Coombs* also describes managing the backups by balancing the desire for granularity with the available storage space. See *Coombs*, paragraph 0041.

Coombs does not anticipate Applicant's claims because *Coombs* does not teach invoking a backup operation and then executing the invoked backup operation.

As stated above, Applicant claims both invoking a backup operation as well as executing the backup operation. "Invoking a backup operation" is different from "executing the backup operation". Applicant has distinguished "invoking" from "executing".

According to Applicant's claims, a backup operation is first invoked. If a module is determined to be connected to a first storage controller, the backup operation is then executed. The backup operation that is executed is the one that was invoked. Therefore, according to Applicant's claims, a backup operation is first invoked and then executed. Therefore, invoking a backup operation is not the same as executing the backup operation.

To anticipate Applicant's claims, *Coombs* must teach invoking and also executing. The Examiner asserts that *Coombs* teaches "invoking a backup operation" by teaching the backup methods and parameters, which are described in paragraphs 0027-0032, being used in backup operations. Regarding "executing the backup operation to store configuration information", the Examiner refers to "system configuration files" and paragraphs 0027-0028. The Examiner cites a part of *Coombs* that supposedly teaches "to store configuration information" but does not cite anything in *Coombs* that teaches "executing the backup operation". The Examiner has not distinguished "invoking" from "executing".

Because *Coombs* does not teach invoking a backup operation as well as executing the invoked backup operation, *Coombs* does not anticipate Applicant's claims.

Applicant also claims responsive to a given event: determining if a removable non-volatile memory module is connected to a first storage controller; and responsive to the removable non-volatile memory module being connected to the first storage controller, executing the backup operation to store configuration information from the first storage controller to the

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removable non-volatile memory module.

Thus, according to Applicant's claims, responsive to a given event, two steps occur. The first step is: determining if a removable non-volatile memory module is connected to a first storage controller. The second step is: responsive to the removable non-volatile memory module being connected to the first storage controller, executing the backup operation to store configuration information from the first storage controller to the removable non-volatile memory module.

As discussed above, *Coombs* teaches a primary storage device 22 and a backup storage device 24 that are connected to a storage controller. When a backup is to be performed, *Coombs* teaches performing the backup. *Coombs* does not go through a process of first determining if the backup storage device 24 is connected to a controller before performing the backup. *Coombs* just assumes that a backup storage device is connected because it simply performs the backup without first checking to see if a storage device is present.

Coombs also teaches the primary and backup storage devices including a mountable (selectively removable) disk drive. See *Coombs*, paragraph 0022. Again, *Coombs* does not determine if the mountable disk drive is present before backing up data. *Coombs* assumes one is present because it performs the backup without checking for the presence of a mountable drive.

Regarding the feature of determining if a removable non-volatile memory module is connected to a first storage controller, the Examiner refers to paragraphs 0022, 0027, and 0028, which are reproduced below.

> [0022] Computer system 10 may be a multi-user or single-user system, including a server, mainframe, personal computer (PC), workstation, laptop, or the like. Each of primary storage device 22 and backup storage device 24 includes rewriteable media such as a fixed disk drive, mountable (i.e. selectively removable) disk drive, disk drive array or other rewriteable media, though magnetic tape or other sequential media are not preferred.
>
> [0027] A primary storage device such as device 22 typically contains two general data types, namely system files and user files. Once loaded and configured via one or more system configuration files, most system files rarely change over time. Preferably, the system files may be coupled to computer system 10 via a separate storage device such as a 32 Mb flash disk available from SimpleTech, Incorporated of Santa Ana, Calif. Conveniently, such storage devices provide quick access times for transferring data to CPU 12 and are primarily read-only in nature thus reducing the need for backup. Any system configuration files may be stored on primary storage device 22 to permit changes to the configuration and to

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facilitate convenient backup with other user files.

> [0028] In accordance with a preferred practice of the invention, the backup process coordinates periodic "full" (i.e. non-incremental) and "incremental" backups of the one or more system configuration files and the user files from primary storage device 22 to backup storage device 24. A full backup is a copy at a particular point in time of all the files to be backed up from primary storage device 22. An incremental backup is a copy at a particular point in time of data files to be backed up from primary storage device 22 and that were changed or added to primary storage device 22 subsequent to a previous backup. The incremental backup may be performed relative to a full backup or an another incremental backup as is well understood by persons skilled in the art. Moreover, the previous backup from which an incremental backup is based need not be the most recent backup as will be explained further below.

Coombs, paragraphs [0022], [0027], and [0028].

The Examiner asserts that Applicant's claimed feature "determining if a removable non-volatile memory module is connected to a first storage controller" is taught by *Coombs* in these paragraphs. Applicant disagrees.

Nothing in these paragraphs, or anywhere else in *Coombs*, teaches a determining step. *Coombs* teaches simply that a backup is performed. *Coombs* does not teach first determining whether a memory module is connected before performing the backup.

The Examiner asserts, in paragraph 6 on page 3 in the Final Office Action that was mailed June 23, 2006, that backing up data to the removable device requires determining whether the device is connected to the processor or not. In this assertion, it appears that the Examiner agrees that *Coombs* does not actually teach a determining step. The Examiner appears to believe that because data is backed up, there must necessarily be a "determining" step; however, such a step is not taught by *Coombs*. Therefore, *Coombs* does not anticipate Applicant's claims because *Coombs* does not teach all of the features of Applicant's claims.

Applicant also claims the combination of determining if a removable non-volatile memory module is connected to a first storage controller; and responsive to the removable non-volatile memory module being connected to the first storage controller, executing the backup operation to store configuration information from the first storage controller to the removable non-volatile memory module. These two steps are performed responsive to a given event.

To anticipate Applicant's claims, *Coombs* must teach both a determination step and the step of executing the backup operation in response to the same given event. Assuming, for the

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sake of argument, that *Coombs* is found to teach the step of "determining", nothing in *Coombs* teaches when such a determination is made. Such a determination could be made at anytime. It does not necessarily have to be made at the time a backup is executed. For example, a determination of whether or not a device is connected to the system could be made when the system is powered on, during the initialization of the operating system, or prior to attempting to initialize I/O devices. These are just a few examples of when such a determination could be made.

The above examples of when a determination could be made indicate the problem with reading a feature into a reference because, since the reference does not teach the feature, the reference does not teach when the feature would occur. *Coombs* does not teach when a determination of whether a module is connected is made because *Coombs* does not teach the determination at all. Therefore, *Coombs* does not teach determining if a module is connected, and if the module is connected, executing the backup operation in response to the same given event.

Because *Coombs* does not teach when a determination if a module is connected, *Coombs* does not teach both determining if a module is connected and then executing the backup if such a module is found to be connected in response to the same event. Therefore, *Coombs* does not anticipate Applicant's claims.

Coombs does not teach all of the features of Applicant's claims. Therefore, this rejection should be reversed.

B. GROUND OF REJECTION 2 (Claims 13 and 16)

Claims 13 and 16 stand rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent Application Publication 2003/0177149, published by *Coombs* in view of U.S. Patent 5,410,707 issued to *Bell*. This position is not well-founded.

Applicant's claim 13 recites wherein the externally accessible socket interface is a Personal Computer Memory Card International Association card slot.

The Examiner states that *Coombs* does not teach the socket interface being a PCMCIA card and relies on *Bell* to teach this feature.

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The combination of *Coombs* and *Bell* does not render Applicant's claim 13 obvious because the combination does not teach invoking means for invoking a backup operation using the backup parameters; and responsive to a given event: determining means for determining if a removable non-volatile memory module is electrically coupled to the processor through the externally accessible socket interface; and responsive to the removable non-volatile memory module being electrically coupled to the processor, executing the backup operation to store configuration information from the memory to the removable non-volatile memory module in combination with wherein the externally accessible socket interface is a Personal Computer Memory Card International Association card slot.

Applicant's claim 16 recites wherein the removable non-volatile memory module is a flash memory module.

The Examiner states that *Bell* teaches a storage controller that backs up data to a removable non-volatile memory module that is a flash memory module.

The combination of *Coombs* and *Bell* does not render Applicant's claim 16 obvious because the combination does not teach invoking means for invoking a backup operation using the backup parameters; and responsive to a given event: determining means for determining if a removable non-volatile memory module is electrically coupled to the processor through the externally accessible socket interface; and responsive to the removable non-volatile memory module being electrically coupled to the processor, executing the backup operation to store configuration information from the memory to the removable non-volatile memory module in combination with wherein the removable non-volatile memory module is a flash memory module.

The Examiner relies on *Bell* to cure the deficiencies of *Coombs*. *Bell* does not cure the deficiencies of *Coombs*; therefore, claims 13 and 16 are not rendered obvious by the combination of *Coombs* and *Bell*.

C. GROUND OF REJECTION 3 (Claim 17)

Claim 17 stands rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent Application Publication 2003/0177149, published by *Coombs* and U.S. Patent 5,410,707 issued to *Bell* in view of U.S. Patent 5,404,485 issued to *Ban*. This position is not well-founded.

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Applicant's claim 17 depends from claim 16 and recites wherein the flash memory module has a flash file system format for storing data.

The Examiner states that *Coombs* and *Bell* do not teach the flash memory module having a flash file system format for storing data and relies on *Ban* to teach this feature.

The combination of *Coombs*, *Bell*, and *Ban* does not render Applicant's claim 17 obvious because the combination does not teach invoking means for invoking a backup operation using the backup parameters; and responsive to a given event: determining means for determining if a removable non-volatile memory module is electrically coupled to the processor through the externally accessible socket interface; and responsive to the removable non-volatile memory module being electrically coupled to the processor, executing the backup operation to store configuration information from the memory to the removable non-volatile memory module wherein the removable non-volatile memory module is a flash memory module in combination with wherein the flash memory module has a flash file system format for storing data.

The Examiner relies on *Ban* to cure the deficiencies of the combination of *Coombs* and *Bell*. *Ban* does not cure the deficiencies of the combination of *Coombs* and *Bell*, therefore, claim 17 is not rendered obvious by the combination of *Coombs*, *Bell*, and *Ban*.

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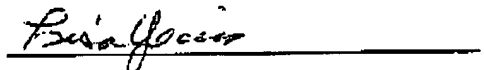
D. CONCLUSION

Coombs does not anticipate Applicant's claims because *Coombs* does not teach or suggest (1) invoking and executing a backup operation, where invoking a backup operation is different from executing a backup operation, or (2) responsive to a given event, determining if a module is connected and, if one is connected, executing the backup operation.

The combination of *Coombs* and *Bell* does not render Applicant's claims 13 or 16 obvious because the combination does not teach or suggest (1) invoking and executing a backup operation, where invoking a backup operation is different from executing a backup operation, or (2) responsive to a given event, determining if a module is connected and, if one is connected, executing the backup operation in combination with the features of claims 13 or 16.

The combination of *Coombs*, *Bell*, and *Ban* does not render Applicant's claim 17 obvious because the combination does not teach or suggest (1) invoking and executing a backup operation, where invoking a backup operation is different from executing a backup operation, or (2) responsive to a given event, determining if a module is connected and, if one is connected, executing the backup operation in combination with the features of claim 17.



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CLAIMS APPENDIX

The text of the claims involved in the appeal are:

1. A method for managing configuration information in a storage controller, the method comprising:

setting, by an operator, backup parameters that define how a backup operation will be executed;

invoking a backup operation using the backup parameters; and

responsive to a given event:

determining if a removable non-volatile memory module is connected to a first storage controller; and

responsive to the removable non-volatile memory module being connected to the first storage controller, executing the backup operation to store configuration information from the first storage controller to the removable non-volatile memory module.

3. The method of claim 1, wherein the given event is a command that was entered by an operator through one of interface software and a boot menu console.

4. The method of claim 1, further comprising:

responsive to a restore event, restoring the configuration information from the removable non-volatile memory module to the first storage controller.

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5. The method of claim 4, wherein the restore event is a command that was entered by an operator through one of interface software and a boot menu console.

6. The method of claim 1, further comprising:

disconnecting the removable non-volatile memory module from the first storage controller.

7. The method of claim 6, further comprising:

connecting the removable non-volatile memory module to a second storage controller.

8. The method of claim 7, further comprising:

responsive to a restore event, restoring the configuration information from the removable non-volatile memory module to the second storage controller.

9. The method of claim 8, wherein the restore event is a command that was entered by an operator through one of interface software and a boot menu console.

10. The method of claim 7, further comprising:

determining whether the configuration information is compatible with the second storage controller; and

responsive to the configuration information not being compatible with the second storage controller, notifying an operator of incompatible configuration information.

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11. The method of claim 1, wherein the configuration information includes at least one of configuration data, firmware, bootware images, and component summary data.

12. A storage controller, comprising:

a processor;

a memory electrically coupled to the processor;

an externally accessible socket interface, wherein the externally accessible socket interface provides an electrical connection to the processor;

backup parameters, set by an operator, that define how a backup operation will be executed;

invoking means for invoking a backup operation using the backup parameters; and

responsive to a given event:

determining means for determining if a removable non-volatile memory module is electrically coupled to the processor through the externally accessible socket interface; and

responsive to the removable non-volatile memory module being electrically coupled to the processor, executing the backup operation to store configuration information from the memory to the removable non-volatile memory module.

13. The storage controller of claim 12, wherein the externally accessible socket interface is a Personal Computer Memory Card International Association card slot.

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15. The storage controller of claim 12, wherein the configuration information includes at least one of configuration data, firmware, bootware images, and component summary data.

16. The storage controller of claim 12, wherein the removable non-volatile memory module is a flash memory module.

17. The storage controller of claim 16, wherein the flash memory module has a flash file system format for storing data.

18. An apparatus for managing configuration information in a storage controller, the apparatus comprising:

means for setting, by an operator, backup parameters that define how a backup operation will be executed;

means for invoking a backup operation using the backup parameters; and

means, responsive to a given event, for:

determining if a removable non-volatile memory module is connected to a first storage controller; and

responsive to the removable non-volatile memory module being connected to the first storage controller, executing the backup operation to store configuration information from the first storage controller to the removable non-volatile memory module.

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19. The apparatus of claim 18, further comprising:

responsive to a restore event, restoring the configuration information from the removable non-volatile memory module to the first storage controller.

20. The method of claim 18, further comprising:

responsive to a restore event, restoring the configuration information from the removable non-volatile memory module to a second storage controller.

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EVIDENCE APPENDIX

There is no evidence to be presented.

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RELATED PROCEEDINGS APPENDIX

There are no related proceedings.

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